

classes. She meets with students prior to the dig to explain the excavation methods they will use. Following the dig, students return to a fully outfitted archeology lab where they clean, count, and classify the artifacts. A separate post-dig lesson concludes the segment and gives students an opportunity to reflect on their new knowledge. In sum, students meet with a teacher or park ranger on no fewer than five occasions. The hope is that in fostering their natural curiosity about the past, they will develop a strong preservation

ethic and a respect for their cultural heritage that will pay dividends far into the future.

Note

* For more information about the Teaching with Historic Places teacher's curriculum used in this program, see "Digging History at Fort Frederica," *CRM* 23:8(39).

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On the Road

"Disturbed" Roadways as Window to the Past

Every year millions of Americans use back country roads to enjoy and to explore America's vast public lands. Recent events such as the Sagebrush rebellion in Nevada, and the controversy over the management plan proposed by the White River National Forest in Glenwood Springs, Colorado, have brought attention to the role and scope of the roads in our nation's public lands. During this land management debate, the effects of roads on endangered habitat, the increasing noise pollution, and the acceleration of erosion are issues that are always mentioned. The effects these roads have on cultural resources are almost always muted. These issues have opened many debates over our backcountry roads, but this paper will focus on the effects that the upkeep of these roads may have on cultural resources. The routine maintenance of these debated roads have been underway for many years and recent efforts to survey such roads before routine road maintenance have proved beneficial and enlightening for archeologists working for the Bureau of Land Management (BLM).

The maintenance of backcountry roads is a rather simple process consisting of using heavy equipment to insert water bars and smooth rough sections of two-track roads. This blading is conducted to facilitate transportation and, more importantly, to counteract erosion created when

roadbeds become stream channels for precipitation, thereby severely down-cutting into previous soils. Over the last three years the BLM in Gunnison, Colorado, has been conducting cultural inventories of their backcountry roads prior to road maintenance in an attempt to deflect road maintenance activities away from archeological sites. These surveys were conducted on roads previously "disturbed" by road blading long before the nation's cultural preservation laws came into effect. These surveys conducted on previously bladed roads revealed many new archeological sites, while only minimally inconveniencing the upkeep of backcountry roads for all Americans.

By simply walking these disturbed roads for routine maintenance, one can alleviate further damage to significant archeological sites, continue the upkeep of public roads by redirecting water bar installation, and create an opportunity to increase the archeological understanding of an area by means of long linear transects through usually minimally surveyed areas.

Since its inception in 1998, the BLM Gunnison has surveyed 60 miles of road slated for road maintenance and identified 71 new cultural resources. While some of these sites are small isolated finds, many are either significant or potentially significant archeological resources. As the BLM archeologist conducting the survey, I walked the ten-foot-wide road at intervals of five

feet; thereby examining the full width of the road. Small forays were made off-road where soil was shallow or conditions hinted at a site obscured by road blading. When sites were encountered they were recorded and flagged so the installation of water bars could occur off site and no further damage would be inflicted on these resources. With these simple methods it was easy to evaluate the disturbed roadways for cultural sites and counteract years of site degradation from road maintenance.

Many would probably argue that disturbance in a road is inconsequential. While this may be true of shallow soils, many sites with deeper soils displayed artifacts not only present in the dredged berm alongside the road, but there were new artifacts on the roadbed indicating further deposits. There was one case of a water bar coming within five meters of a rock lined fire pit, and another case displayed a hearth in a road cut in only 20-30 cm of soil on an eligible site which would have been obliterated by another season of road maintenance. Furthermore, a separate project involving a severely incised roadbed left over from the early 20th century displayed a rock filled fire pit 20-30 cm below the old ground surface, from which a radiocarbon sample was taken and dated to A.D. 890. The installation of a water bar, which can sometimes reach 50 feet in length and dip 10-20 cm in depth, would destroy such a feature. A season of routine road maintenance may install or maintain 10 to over 100 water bars in a summer, yet something as small as a cattle trough or range pipeline usually requires environmental assessments and the required cultural clearances. Recent archeological investigation within the Gunnison basin has documented extensive highly significant sites yielding over 100 features in only a few centimeters of soil.* These findings underscore the importance of preserving shallow sites even if they have already experienced some disturbance.

In a sad irony, archeologists too can benefit from disturbed roadways. Water bars and roads can demonstrate the presence of buried features in an otherwise insignificant lithic scatter. In many cases the disturbed portion of the site in the road and berm contained more artifacts than the normal ground surface. In some cases road cuts revealed sites otherwise undetectable on the surface. The long stretches surveyed also gave BLM archeologists a small glimpse into the land use, raw material locations, and other archeologi-

cal research questions. Dismissing these roads as disturbed contexts would rob archeologists of important information concerning the pre-history of the Rocky Mountain Region.

It is no secret to the public that many great archeological sites lie underfoot or under tire. Numerous sites encountered over the past three years showed definite evidence of vandalism in the form of looters piles. Far from the heavily vandalized Puebloan ruins of the Southwest, almost every single site in this remote resource area has witnessed some degree of collecting. These same sites, however damaged, continue to yield information. Numerous diagnostic projectile points were still found in roads giving archeologists a rough indication of temporal occupation. In a few cases, something as small as one remaining flake in a roadway led to the discovery of interesting and significant sites with fire pits, ground stones, and multiple stone tools. Sites encountered during the survey were as diverse as the terrain the roads span. Lithic scatters, camp-sites, and possible game drives and ceremonial sites were all newly recorded as a result of this effort. The BLM Gunnison has also recovered three radiocarbon dates from good features on "disturbed" sites dating from 4040 B.P. to 1200 B.P., the later date adding to a poorly understood time in the Colorado mountains.

Efforts by the BLM, Gunnison Field Office demonstrate that cultural resource inventory of proposed routine road maintenance can be quite beneficial. In almost all cases waterbars only needed to be moved a few meters from their planned or previous locations. Luckily, the human penchant for settling flattened areas coincides well with water bar placement which usually occurs near heavy erosion areas. This situation, therefore, allows efficient management of two vital natural resources.

With the continuation of funding, the BLM's efforts will further demonstrate that walking those old disturbed roads is a necessity in areas rich with archeological resources which, I believe, is most of the western United States.

Note

- * Stiger, Mark. 1993 Archaeological Investigations at the Tenderfoot Site. Western State College of Colorado. Gunnison, Colorado.

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